IN THE CLAIMS

This listing of the claims replaces all prior versions of the claims in the application.

Listing of the Claims

1. (Original.) An isolated polypeptide comprising an amino acid sequence selected from the group consisting of:

a) a polypeptide comprising an amino acid sequence of SEQ ID NO:1,

b) a naturally occurring polypeptide comprising an amino acid sequence at least 90% identical to an amino acid sequence of SEQ ID NO:1,

c) a biologically active fragment of a polypeptide having an amino acid sequence of SEQ ID NO:1, and

d) an immunogenic fragment of a polypeptide having an amino acid sequence of SEQ ID NO:1.

2. (Original.) An isolated polypeptide of claim 1, having a sequence of SEQ ID NO:1.

3. (Original.) An isolated polynucleotide encoding a polypeptide of claim 1.

4. (Original.) An isolated polynucleotide encoding a polypeptide of claim 2.

5. (Original.) An isolated polynucleotide of claim 4, having a sequence of SEQ ID NO:2.

6. (Original.) A recombinant polynucleotide comprising a promoter sequence operably linked to a polynucleotide of claim 3.

7. (Original.) A cell transformed with a recombinant polynucleotide of claim 6.

8. (Original.) A transgenic organism comprising a recombinant polynucleotide of claim 6.

9. (Original.) A method for producing a polypeptide of claim 1, the method comprising:

a) culturing a cell under conditions suitable for expression of the polypeptide, wherein said cell is transformed with a recombinant polynucleotide, and said recombinant polynucleotide comprises a promoter sequence operably linked to a polynucleotide encoding the polypeptide of claim 1, and

b) recovering the polypeptide so expressed.

10. (Original.) A method of claim 9, wherein the polypeptide has the sequence of SEQ ID NO:1.

11. (Original.) An isolated antibody which specifically binds to a polypeptide of claim 1.

12. (Original.) An isolated polynucleotide comprising a sequence selected from the group consisting of:

a) a polynucleotide comprising a polynucleotide sequence of SEQ ID NO:2,

b) a naturally occurring polynucleotide comprising a polynucleotide sequence at least 90% identical to a polynucleotide sequence of SEQ ID NO:2,

c) a polynucleotide having a sequence complementary to a polynucleotide of a),

d) a polynucleotide having a sequence complementary to a polynucleotide of b) and

e) an RNA equivalent of a)-d).

13. (Original.) An isolated polynucleotide comprising at least 60 contiguous nucleotides of a polynucleotide of claim 12.

14. (Original.) A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 12, the method comprising:

a) hybridizing the sample with a probe comprising at least 20 contiguous nucleotides comprising a sequence complementary to said target polynucleotide in the sample, and which probe specifically hybridizes to said target polynucleotide, under conditions

whereby a hybridization complex is formed between said probe and said target polynucleotide or fragments thereof, and

b) detecting the presence or absence of said hybridization complex, and, optionally, if present, the amount thereof.

15. (Original.) A method of claim 14, wherein the probe comprises at least 60 contiguous nucleotides.

16. (Original.) A method for detecting a target polynucleotide in a sample, said target polynucleotide having a sequence of a polynucleotide of claim 12, the method comprising:

a) amplifying said target polynucleotide or fragment thereof using polymerase chain reaction amplification, and

b) detecting the presence or absence of said amplified target polynucleotide or fragment thereof, and, optionally, if present, the amount thereof.

17. (Original.) A composition comprising a polypeptide of claim 1 and a pharmaceutically acceptable excipient.

18. (Original.) A composition of claim 17, wherein the polypeptide has an amino acid sequence of SEQ ID NO:1.

19. (Original.) A method for treating a disease or condition associated with decreased expression of functional leptin receptor gene-related protein (LRGRP), comprising administering to a patient in need of such treatment the composition of claim 17.

20. (Original.) A method for screening a compound for effectiveness as an agonist of a polypeptide of claim 1, the method comprising:

a) exposing a sample comprising a polypeptide of claim 1 to a compound, and

b) detecting agonist activity in the sample.

21. - 22. (Canceled.)

23. (Original.) A method for screening a compound for effectiveness as an antagonist of a polypeptide of claim 1, the method comprising:

a) exposing a sample comprising a polypeptide of claim 1 to a compound, and

b) detecting antagonist activity in the sample.

24. - 25. (Canceled.)

26. (Original.) A method of screening for a compound that specifically binds to the polypeptide of claim 1, the method comprising:

a) combining the polypeptide of claim 1 with at least one test compound under suitable conditions, and

b) detecting binding of the polypeptide of claim 1 to the test compound, thereby identifying a compound that specifically binds to the polypeptide of claim 1.

27. (Original.) A method of screening for a compound that modulates the activity of the polypeptide of claim 1, said method comprising:

a) combining the polypeptide of claim 1 with at least one test compound under conditions permissive for the activity of the polypeptide of claim 1,

b) assessing the activity of the polypeptide of claim 1 in the presence of the test compound, and

c) comparing the activity of the polypeptide of claim 1 in the presence of the test compound with the activity of the polypeptide of claim 1 in the absence of the test compound, wherein a change in the activity of the polypeptide of claim 1 in the presence of the test compound is indicative of a compound that modulates the activity of the polypeptide of claim 1.

28. (Original.) A method for screening a compound for effectiveness in altering expression of a target polynucleotide, wherein said target polynucleotide comprises a polynucleotide sequence of claim 5, the method comprising:

a) exposing a sample comprising the target polynucleotide to a compound, under conditions suitable for the expression of the target polynucleotide,

b) detecting altered expression of the target polynucleotide, and

c) comparing the expression of the target polynucleotide in the presence of varying amounts of the compound and in the absence of the compound.

29. (Original.) A method for assessing toxicity of a test compound, the method comprising:

a) treating a biological sample containing nucleic acids with the test compound,

b) hybridizing the nucleic acids of the treated biological sample with a probe comprising at least 20 contiguous nucleotides of a polynucleotide of claim 12 under conditions whereby a specific hybridization complex is formed between said probe and a target polynucleotide in the biological sample, said target polynucleotide comprising a polynucleotide sequence of a polynucleotide of claim 12 or fragment thereof,

c) quantifying the amount of hybridization complex, and

d) comparing the amount of hybridization complex in the treated biological sample with the amount of hybridization complex in an untreated biological sample, wherein a difference in the amount of hybridization complex in the treated biological sample is indicative of toxicity of the test compound.

30. - 45. (Canceled.)

46. A microarray wherein at least one element of the microarray is a polynucleotide of claim 13.

47. (Canceled.)

48. (Original.) An array comprising different nucleotide molecules affixed in distinct physical locations on a solid substrate, wherein at least one of said nucleotide molecules comprises a first oligonucleotide or polynucleotide sequence specifically hybridizable with at least 30 contiguous nucleotides of a target polynucleotide, and wherein said target polynucleotide is a polynucleotide of claim 12.

49.- 55. (Canceled.)

56. (Original.) A polypeptide of claim 1, comprising the amino acid sequence of SEQ ID NO:1.

57. (Original.) A polynucleotide of claim 12, comprising the polynucleotide sequence of SEQ ID NO:2.